CASHLESS TRANSACTION SYSTEMS: A STUDY OF PARADIGM SHIFT IN INDIAN CONSUMER BEHAVIOUR

REVISED SYNOPSIS

Submitted to registration for the research pertaining to the degree of
DOCTOR OF PHILOSOPHY (Ph.D)
IN MANAGEMENT

SUPERVISOR
DR. SANJEEV BHATNAGAR

CO-SUPERVISOR
DR. AKSHAY KUMAR SATSANGI

RESEARCHER
ASIM HUSAIN

FACULTY OF SOCIAL SCIENCES
DAYALBAGH EDUCATIONAL INSTITUTE
(DEEMED UNIVERSITY)
DAYALBAGH, AGRA-282005
(U.P), INDIA

INTRODUCTION

HISTORICAL BACKGROUND

To understand the cashless methods of transactions the researcher will have a quick overview on cash and its transactions. Money is one the most important means to fulfil our needs and wants. The means to satisfy our needs and wants are currencies of different types that are issued by the governments of a country and then they are exchanged in lieu of products and services. The money is a developed type of means for day to day transactions and has emerged from various systems of exchange in human civilization.

Earlier, there were no currencies but all the important goods and services were acquired by exchanging other goods and services; this system of exchange was known as a Barter system. The need for monetary value was emerged as a psychological assurance to trust each other and to involve an external body to promise the payment in terms of a promissory note or a coin, this is the time when currencies or coins came into existence. Ancient china, India, and Africa started to use cowries and shekels.

The emergence of new technology and need for a global business made the cashless transactions more popular. There were various methods of cashless transactions that were frequently used, but due to the economic advancements the need for other faster and reliable methods has motivated many entrepreneurs and economist to introduce reliable and easy to use methods of cashless transaction.

CASHLESS TRANSACTION SYSTEMS

Cashless transaction is a process of buying goods and services against money where there is no physical currency is involved. The physical currency is replaced by a number of methods that are powered by digital information technology and are capable to transfer money from one person's bank account to another person's. All these money transfer

methods have their own, features, qualities, and mechanisms that work together with other devices or equipments; therefore they are termed as "systems". [1]

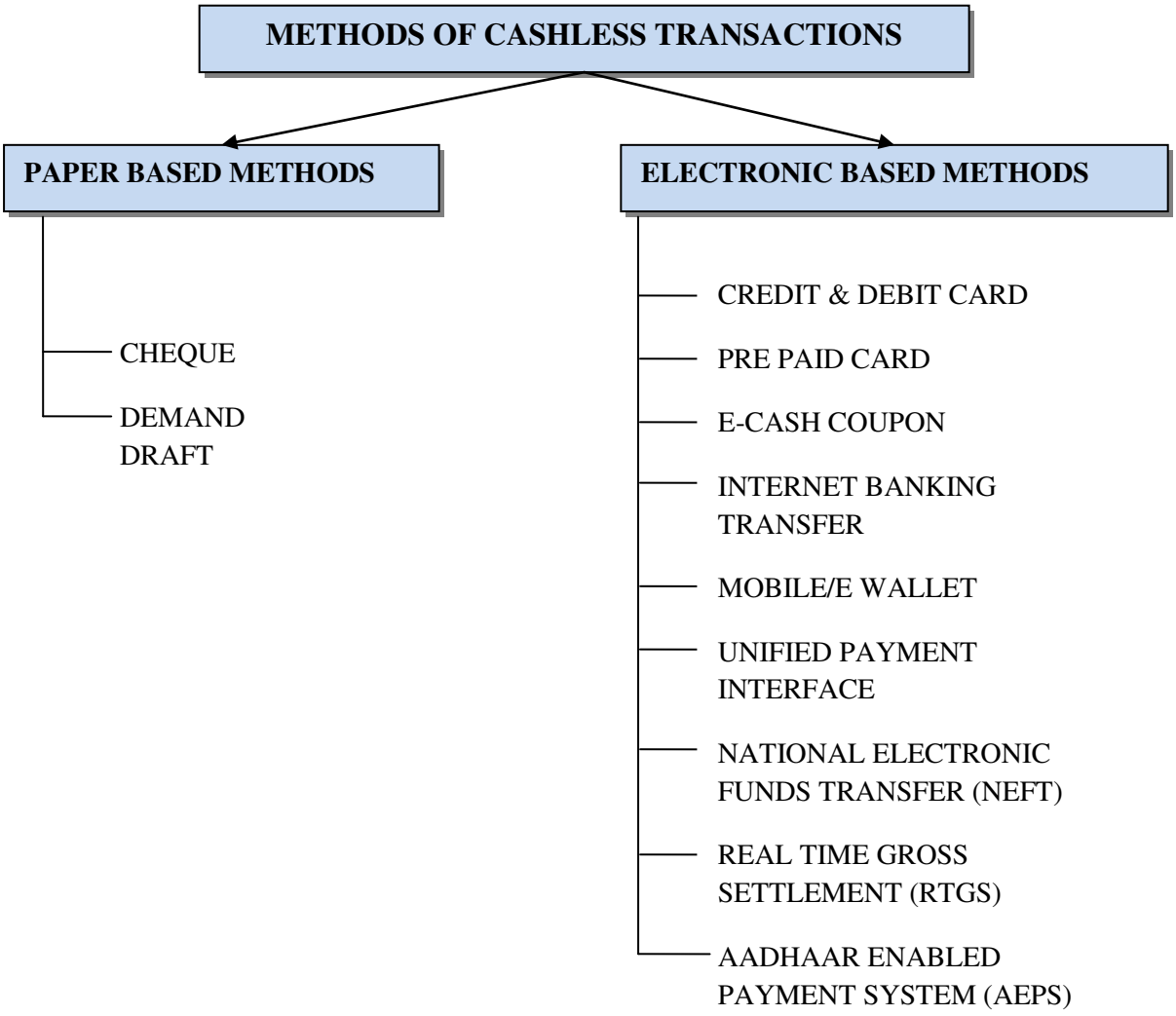
As for any trading activity, the issue of safe and reliable money exchange between transacting parties is also essential. In a cashless environment, payments take the form of money exchange in an electronic form which makes it safe and reliable. Merchant sells the goods to customer and customer pays the price with the help of cashless methods with safety and reliability where as in offline world the payments are made with cash or through cheque that may be counterfeited.

There are many reasons behind the people's choice to do cashless transactions like convenience, improved and trusted digital technology, need to acquire things faster and cheaper along with maintaining a track record for the taxation purposes. The credit and Debit cards were the most common for cashless transactions in India like other countries but a shift in the demand and after the historical decision of demonetization taken by the Hon Prime Minister of India "Mr. Narendra Modi" boosted other methods of cashless transaction. The shifting paradigm gave a new height to the cashless transactions in the country and also influenced consumers and their perception towards these methods of transaction.

METHODS OF CASHLESS TRANSACTION

Clumsy and expensive to handle coins and notes are replaced by efficient electronic payments initiated by various types of plastic cards that have a tantalizing prospect for the twenty-first century. There are various cashless transaction methods such as Credit cards, Debit cards, Bank pre paid cards, Mobile/E Wallets, ATM money transfers, Internet banking transfers, AADHAR Enabled Payment System (AEPS), Unified Payment Interface (UPI), Cheques, Demand drafts, NEFT & RTGS transfers and, E-cash coupons.

Figure No: 1 Methods of Cashless Transactions in India

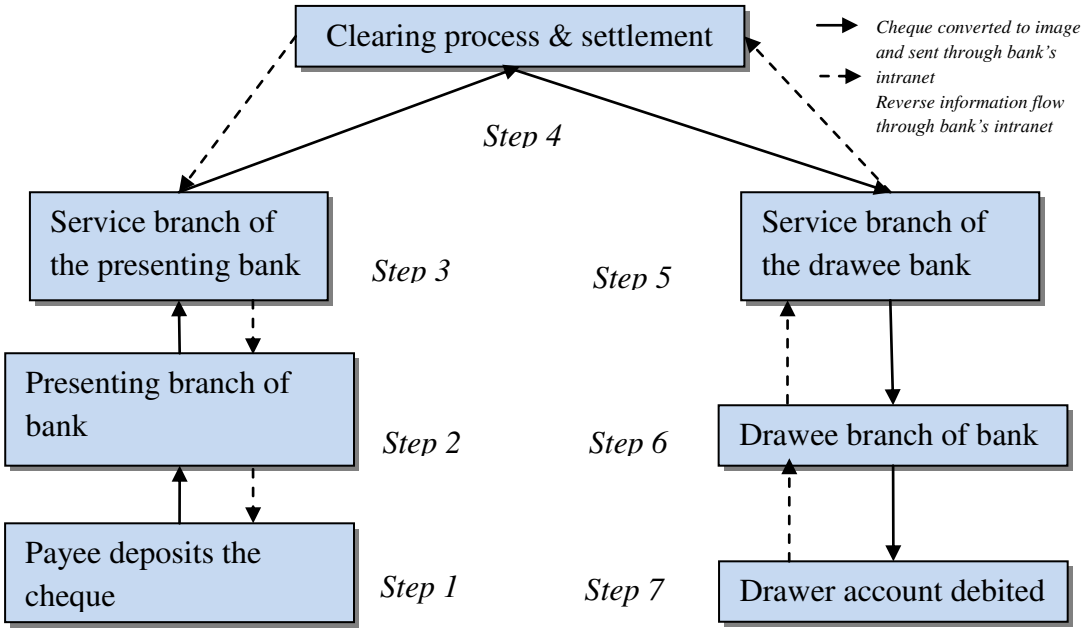


METHODS OF CASHLESS TRANSACTION AND THEIR BASIC MECHANISM

PAPER BASED METHODS:

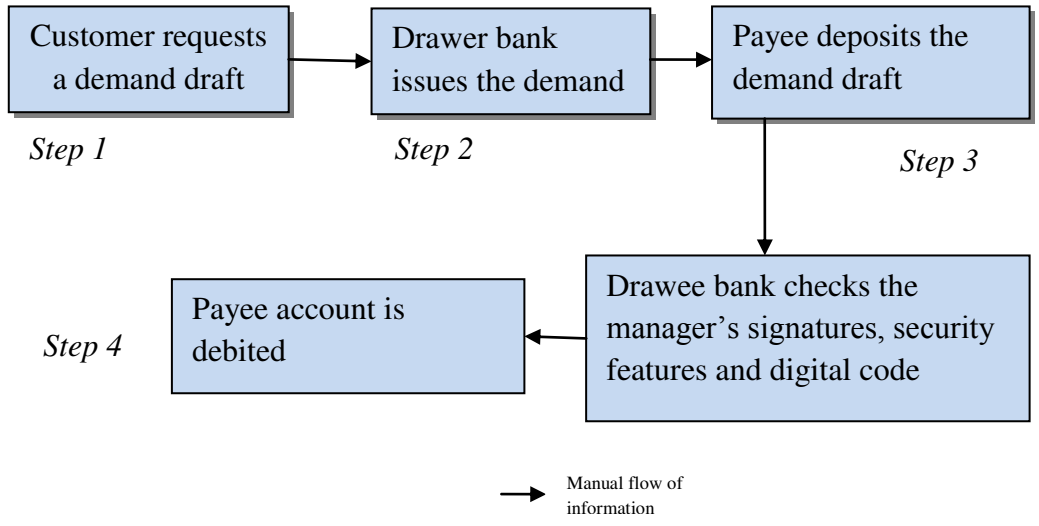
- **Cheque:** A cheque is a negotiable instrument that orders a bank to pay a specific amount of money from a person's account to the person in whose name the cheque has been issued. The person writing the cheque, has a transaction banking account (often called a current, cheque or saving account) where his money is held. A cheque endorses a digital certificate to authenticate bank account and it offers great security features. Cheques are processed online and are governed by the same laws that apply to other methods of cashless transaction.

Figure No: 2 Basic Mechanism of a Cheque



- **Demand draft:** A demand draft is a negotiable instrument issued by a certain bank. A demand draft is a negotiable instrument similar to a bill of exchange. A bank issues a demand draft to a client (drawer), directing another bank (drawee) or one of its own branches to pay a certain sum to the specified party (payee). It is used for transferring money from one place to another with great convenience and safety.

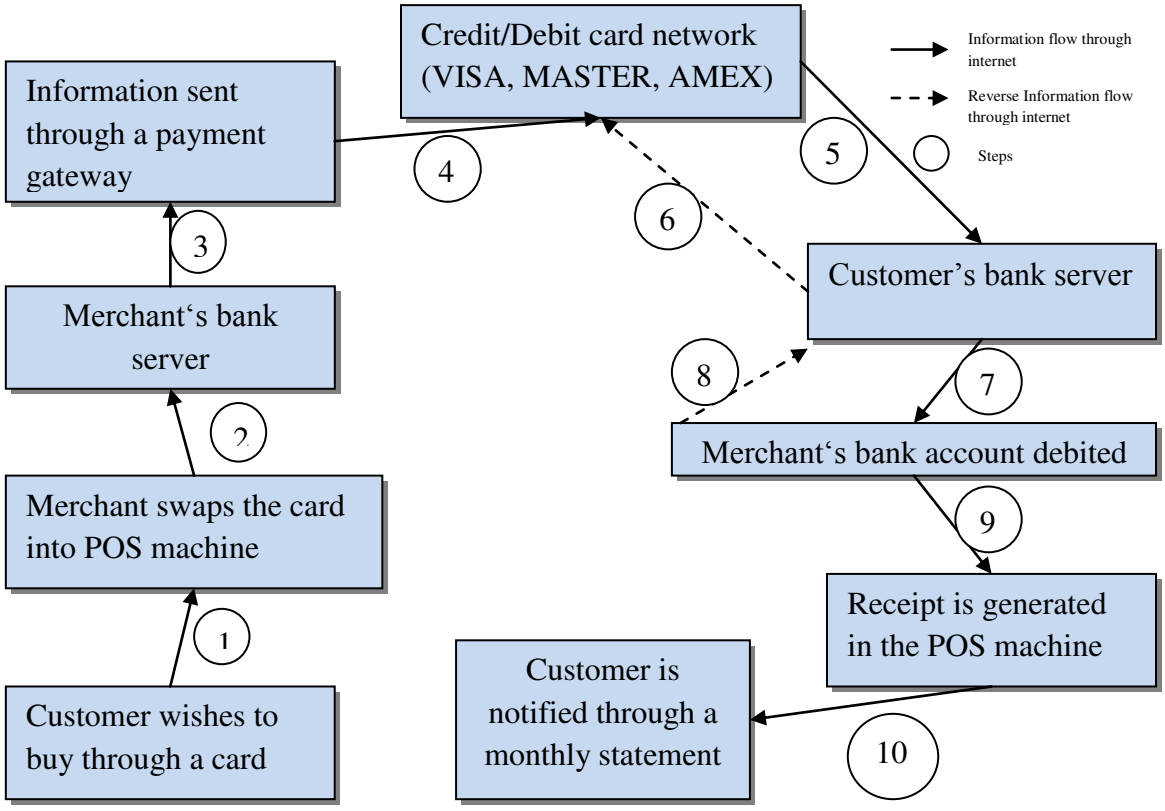
Figure No: 3 Basic Mechanism of a Demand draft


Customer requests a demand draft
Step 1
Drawer bank issues the demand
Step 2
Payee deposits the demand draft
Step 3
Drawee bank checks the manager's signatures, security features and digital code
Step 4
Payee account is debited
Manual flow of information

ELECTRONIC BASED METHODS:

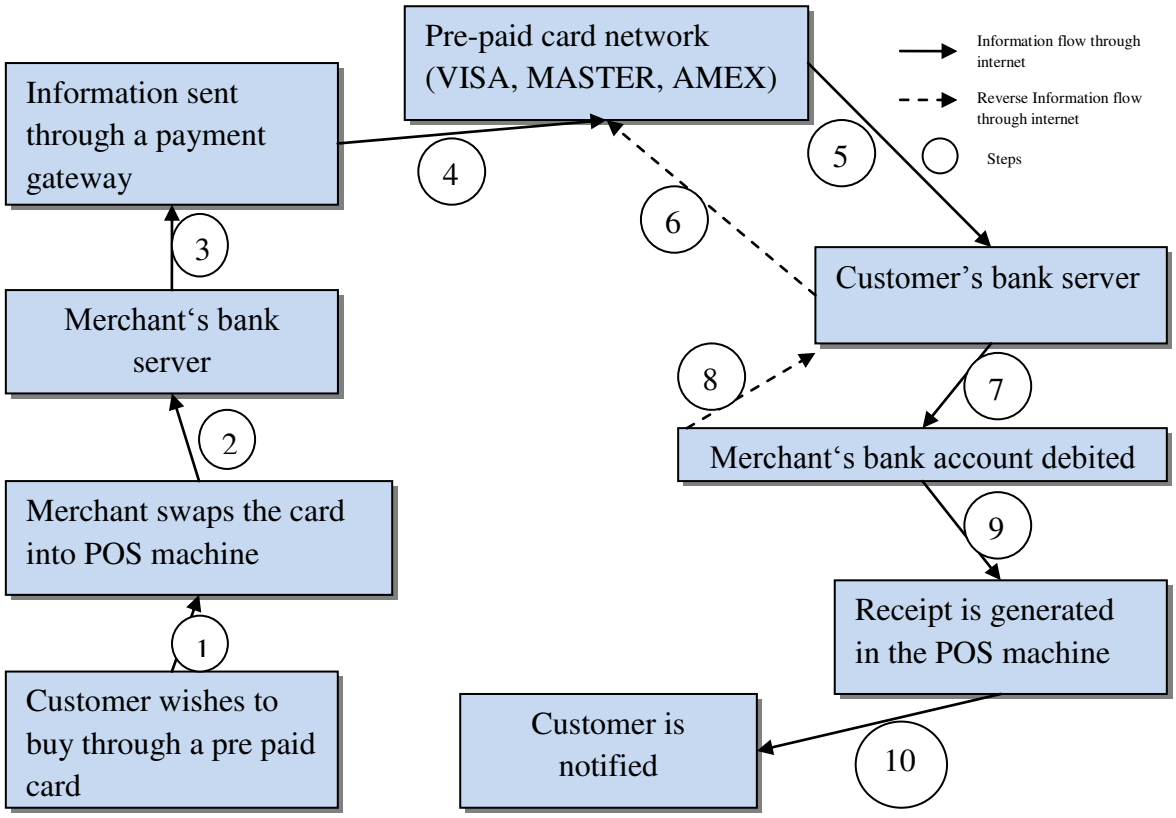
- **Credit card:** A credit card is a piece of plastic offered from visa maser card or any other network which allows paying for a purchase by borrowing credit from the credit card company. To purchase goods from merchant who accepts credit card needs to have a credit card reader for the settlement.
- **Debit card:** A debit card is a prepaid card and also known as an ATM card. An individual has to open an account with the issuing bank which gives debit card with a personal ID Number, when he makes a purchase he enter his pin number on shop pin pad. When the card is slurped through the electronic terminal it dials the acquire a banking system either master card or visa card that validate the pin and finds out from the issuing bank whether to accept or decline the transaction the customer can never overspend because the system rejects any transaction which exceeds the balance in his account.

Figure No: 4 Basic Mechanism of a Credit/Debit card



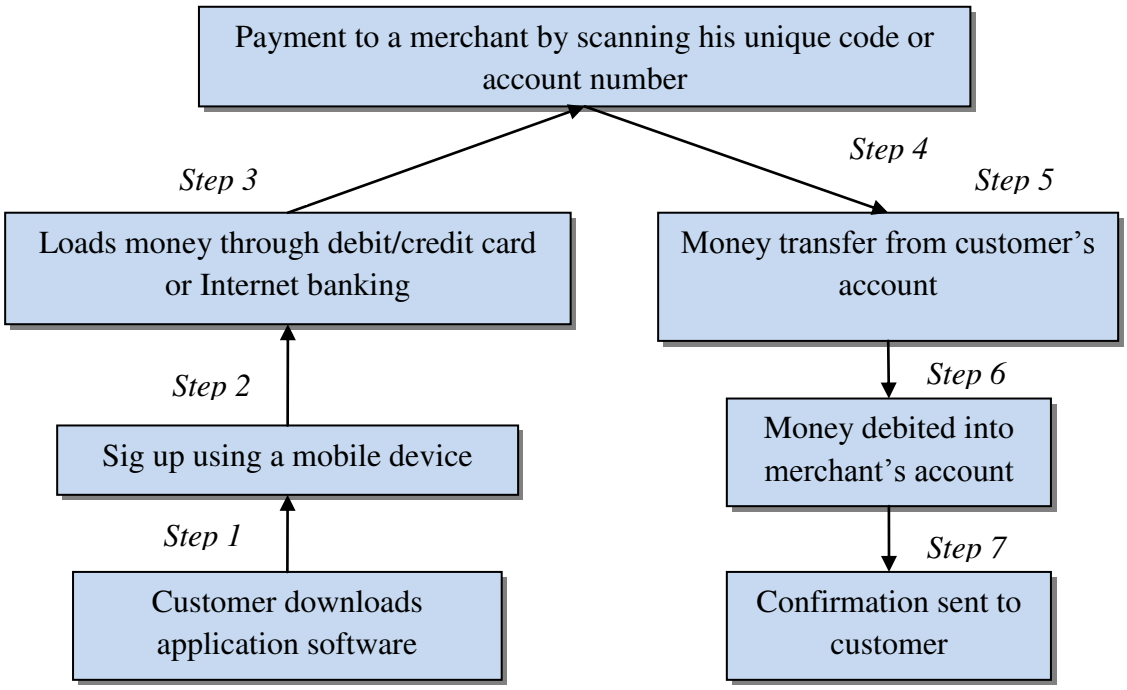
- **Pre-paid card:** A pre-paid card is about the size of a credit card, which is made of plastic with an embedded microprocessor chip that holds important financial and personal information. The microprocessor chip is loaded with the relevant information and periodically recharged. In addition to these pieces of information, systems have been developed to store cash onto the chip. In order to pay via smart credit and it is necessary to introduce the card into a hardware terminal. The device requires a special key from the issuing bank to start a money transfer in either direction.

Figure No: 5 Basic mechanism of a Pre-paid card



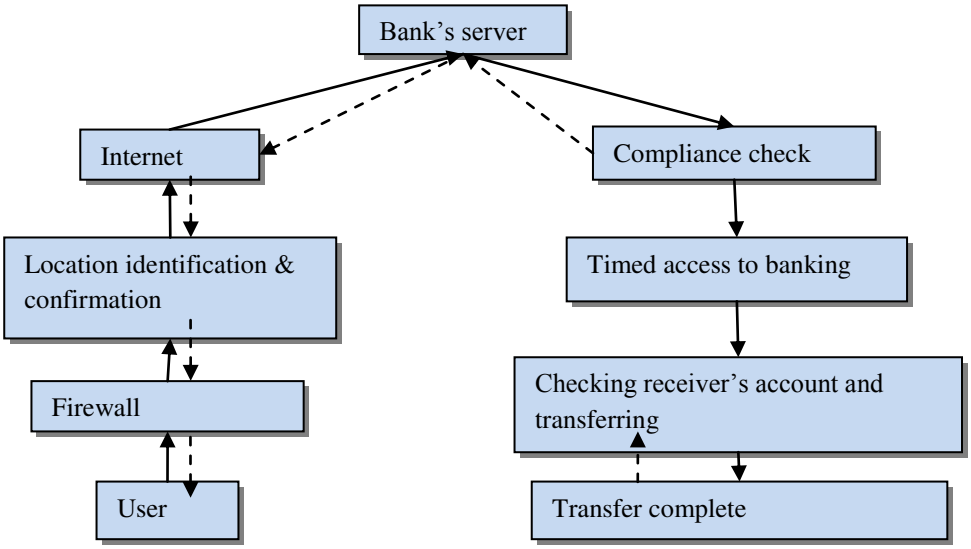
- **E-Wallet (Mobile Wallet):** An electronic wallet is a method which is very useful for frequent online shoppers. It is commercially available for pocket as palm-sized, hand held, and desktop PCs. It offers a secure, convenient, and portable tool for online shopping. It stores personal and financial information such as credit cards, passwords and, Pins to facilitate the credit-card order process.

Figure No: 6 Basic mechanism of a Mobile/E-Wallet transaction


Payment to a merchant by scanning his unique code or account number
Step 3
Step 4
Step 5
Loads money through debit/credit card or Internet banking
Money transfer from customer's account
Step 2
Step 6
Sig up using a mobile device
Money debited into merchant's account
Step 1
Step 7
Customer downloads application software
Confirmation sent to customer

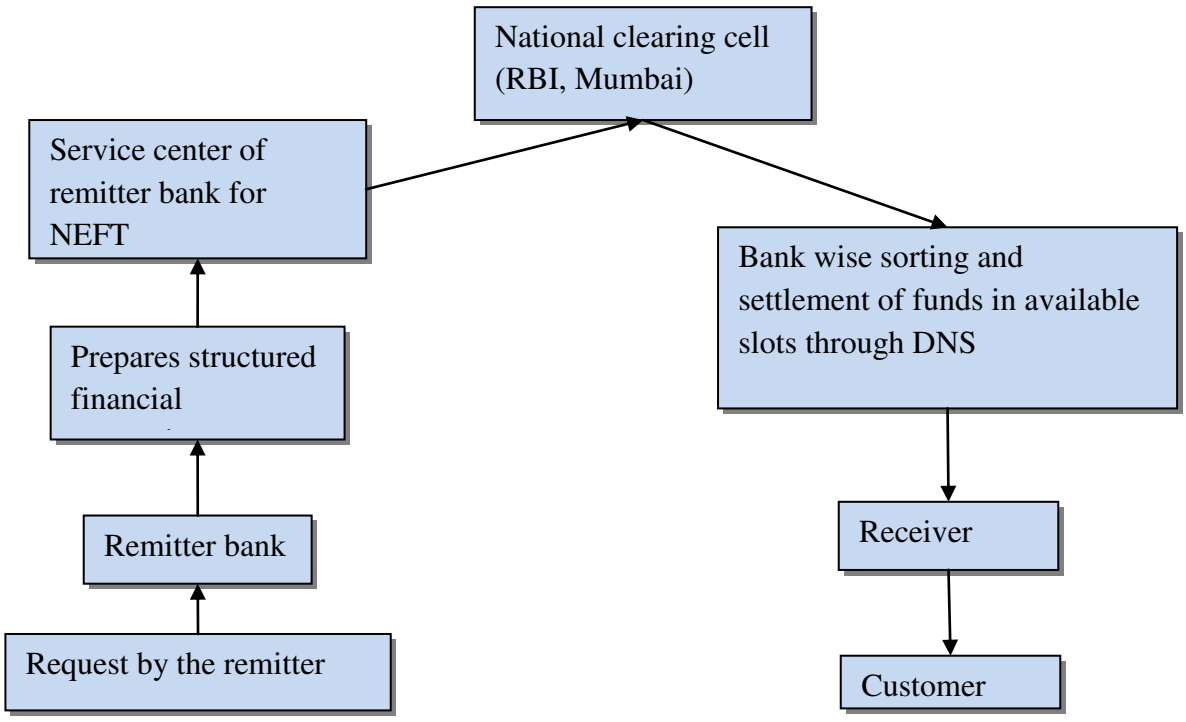
- **Internet banking transfer:** Online banking transfer is also known as internet banking, E-banking or Virtual banking transfer. It is an electronic payment system that enables customers of a bank or any other financial institution to conduct a range of financial transactions through the financial institution's website. The online banking system typically connects to the core banking system operated by a bank to its branch banking with the help of internet and bank's own intranet.

Figure No: 7 Basic mechanism of an internet banking transfer



- **NEFT (National Electronic Funds Transfer):** National Electronic Funds Transfer (NEFT) is a nation-wide payment system facilitating one-to-one funds transfer. Under this method, individuals, firms and corporates can electronically transfer funds from any bank branch to any individual, firm or corporate having an account with any other bank branch in the country. Even, such individuals who do not have a bank account (walk-in customers) can also deposit cash at the NEFT-enabled branches. NEFT is an electronic fund transfer system that operates on a Deferred Net Settlement (DNS) basis which settles transactions in batches. In DNS, the settlement takes place with all transactions received till the particular cut-off time and then these transactions are netted (payable and receivables).

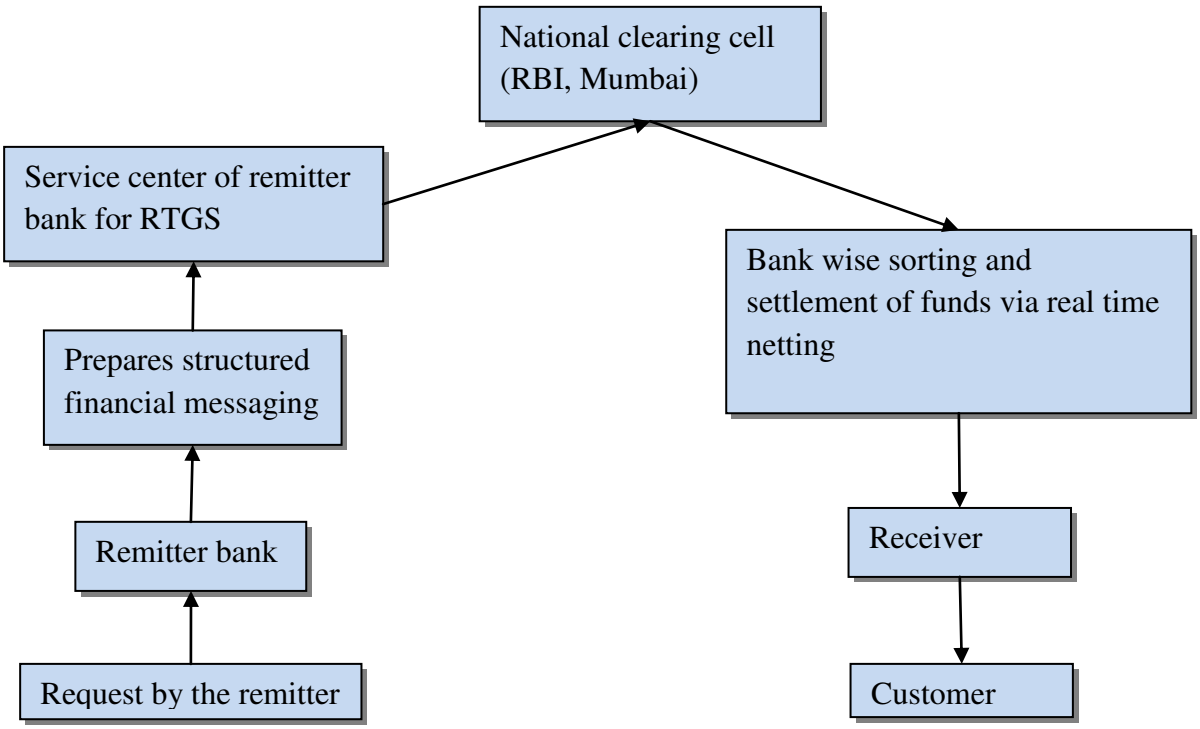
Figure No: 8 Basic mechanism of an NEFT transaction


National clearing cell (RBI, Mumbai)
Service center of remitter bank for NEFT
Bank wise sorting and settlement of funds in available slots through DNS
Prepares structured financial
Receiver
Remitter bank
Request by the remitter
Customer

- **RTGS (Real Time Gross Settlement):** The acronym 'RTGS' stands for Real Time Gross Settlement, which can be defined as the continuous (real-time) settlement of funds transfer individually on an order by order basis (without netting). 'Real Time'

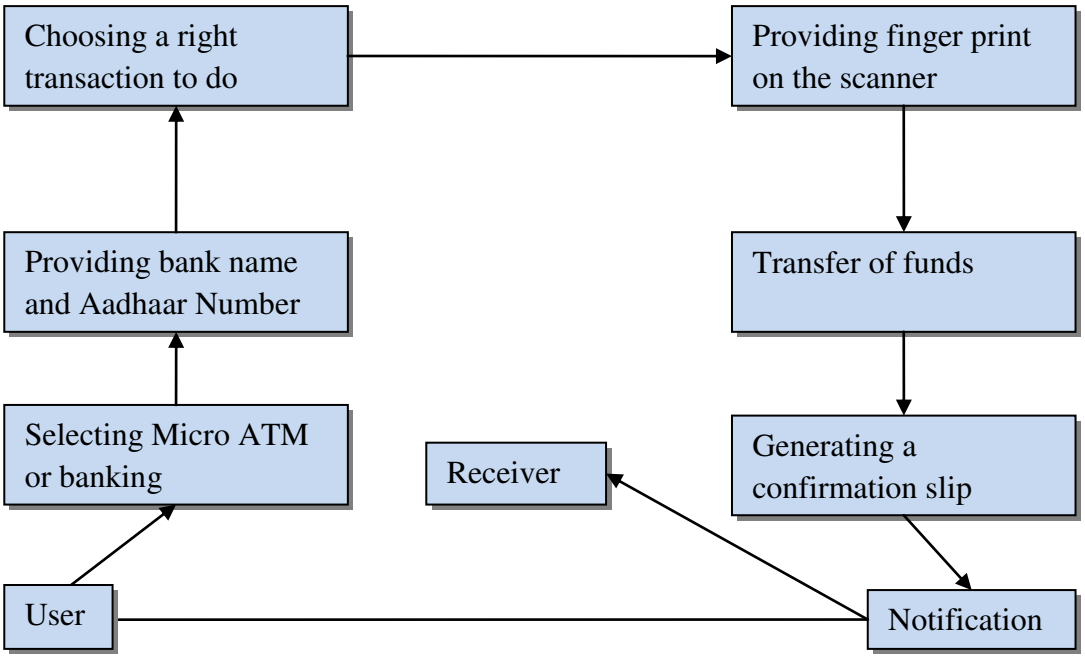
means the processing of instructions at the time they are received rather than at some later time. Gross Settlement means the settlement of funds transfer instructions occurs individually. Considering that the funds settlement takes place in the books of the Reserve Bank of India, the payments are final and irrevocable.

Figure No: 9 Basic mechanism of a RTGS transaction


National clearing cell (RBI, Mumbai)
Service center of remitter bank for RTGS
Bank wise sorting and settlement of funds via real time netting
Prepares structured financial messaging
Receiver
Remitter bank
Request by the remitter
Customer

- **Aadhaar enabled payment system (AEPS):** AEPS is a new cashless method offered by the National Payments Corporation of India to banks, and other financial institutions using 'Aadhaar' number and online UIDAI authentication through their respective business correspondent service centres. Aadhaar Enabled Payment System provides basic financial services (cash deposit, balance enquiry, cash withdrawal and remittance) at low cost access devices (called Micro ATMs) maintained at Business correspondents in an inter-operable way. Aadhaar Enabled Payment System is a way to get money from the bank account or transfer cash. This system neither requires the signature nor does need to visit a bank branch.

Figure No: 10 Basic mechanism of an Aadhaar enabled payment system



PARADIGM SHIFT OF CASHLESS TRANSACTIONS IN INDIA

The term paradigm shift is described as a change in basic assumption within the ruling theory of science. The term paradigm shift has found uses in contexts, representing the notion of a major change in a certain thought pattern. A radical change in the personal beliefs, complex systems, or organizations replacing the former way of thinking and organizing with a radically different way of thinking is paradigm shift. This Paradigm shift is due to the influence of technology with most people preferring online shopping rather the traditional physical store shopping. The corporate and retail sectors in India have witnessed the shift in consumer behaviour in every product or service starting from groceries to commodities. According to The FICCI Technopak report, the people of working age between 16 - 60 years which represent 64 per cent of the total population of India[2] with a rich base of young consumers who have a different set of needs and are more amenable to branded products and services [2] . They want to buy these products and services with fashion, convenience, and speed. In last so many years the use of ATM has

increased significantly given rise to the cashless transactions wherein the debit cards are used for sending money or cash withdrawals. In so many studies it has been found that the factors for customer satisfaction are giving competitive advantage to the companies that are involved in cashless transactions or in providing solutions for cashless transactions. The use of ATMs and other online transactions is a proof that consumer trends are shifting towards positive side which is concluded by several studies. This shift in the paradigm is a result of the behaviour of consumers and their preferences for using methods of cashless transactions.

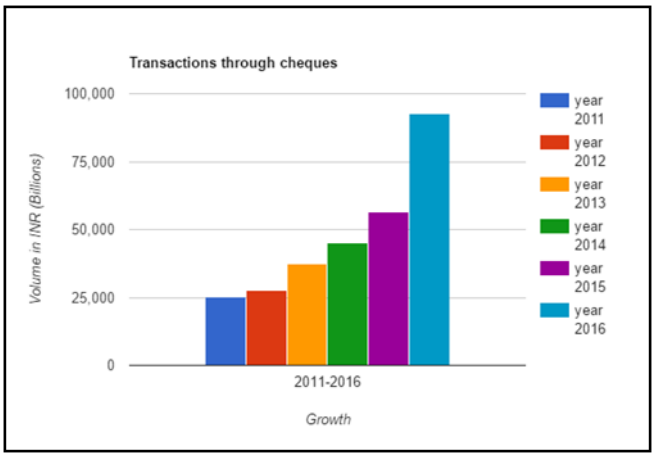
Table No: 1 Snapshot of increase in cashless transactions in India during 2011 - 2016

METHOD OF TRANSACTION	**2011 IN INR (Billions)**	**2012 IN INR (Billions)**	**2013 IN INR (Billions)**	**2014 IN INR (Billions)**	**2015 IN INR (Billions)**	**2016 IN INR (Billions)**	**% GROWTH from 2011 to 2016**
CHEQUES	25154	27526.11	37256.12	45212.23	56451.25	92548.72	44.65%
NEFT & RTGS	50121	51002	55837.91	59248.36	60266.19	87287.04	12.35%
INTERNET BANKING	293523	311516	325462	423524.26	524254	623251.23	18.72%
MOBILE/E-WALLLET	41	62.21	97.12	115.32	137.67	343.57	123%
CREDIT & DEBIT CARDS	19006	19252	20016.81	20816.12	21510.39	31069.64	10.57%
AEPS*			Nil	Nil	190	2210	1063%

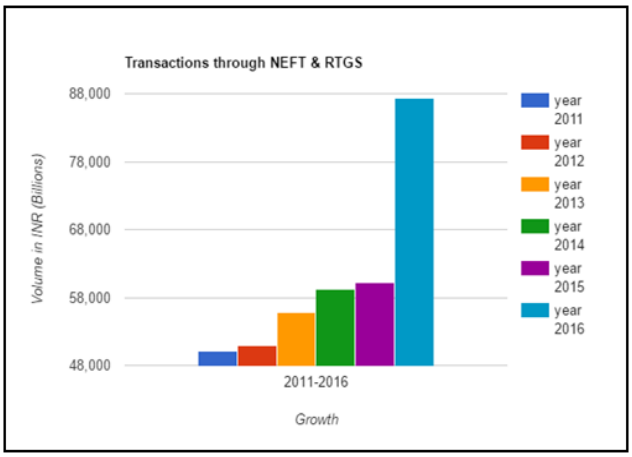
*Aadhaar enabled payment systems introduced in the year 2015 and will also be in the scope of the study.

Source: Annual reports "Reserve Bank of India" 2016. [3]

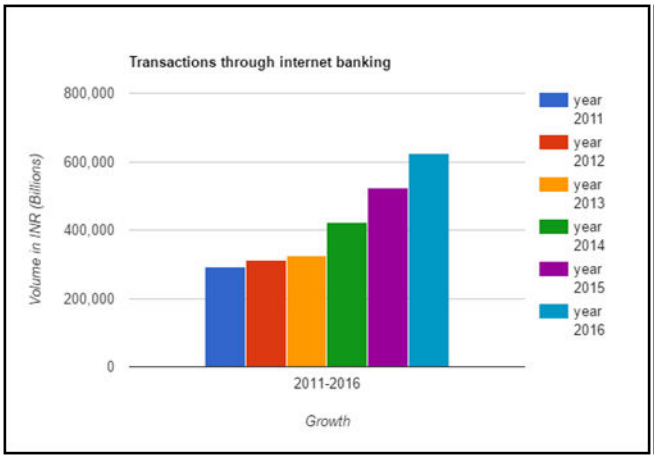
Figure No: 11 Graphical representations for the growth of cashless transactions in India from the year 2011-2016



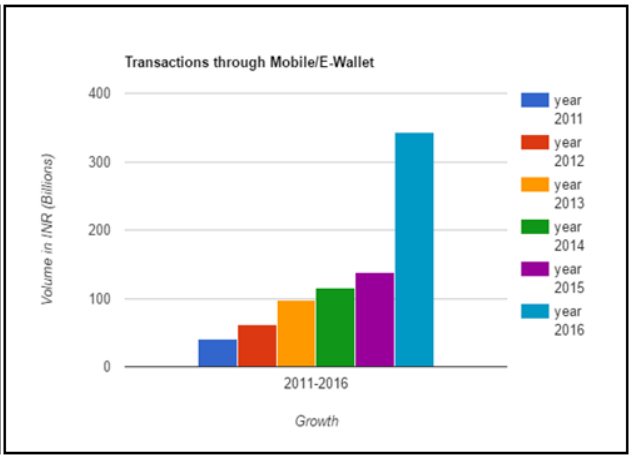
Cheque transactions



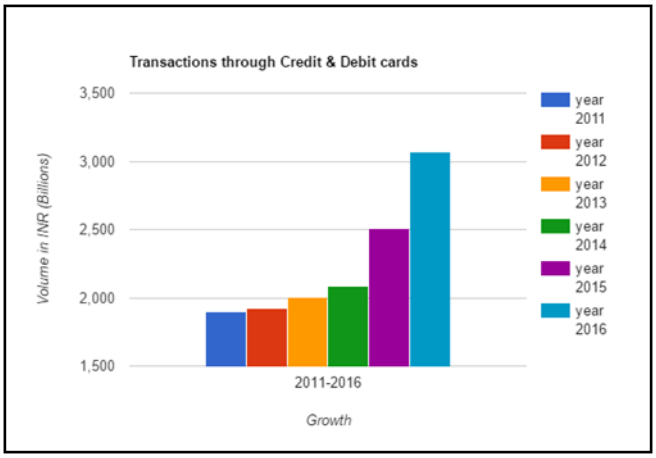
NEFT & RTGS transactions



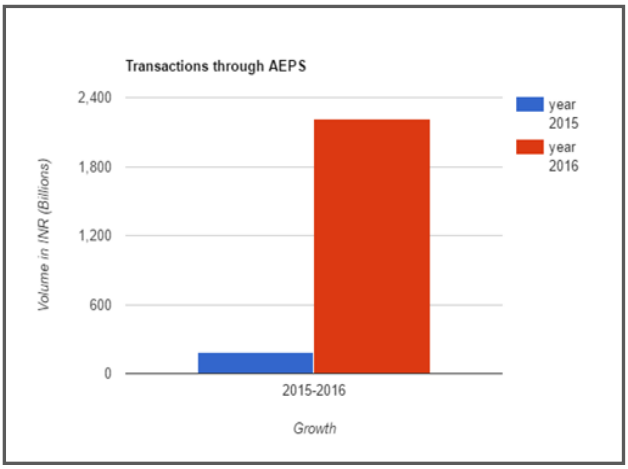
Internet banking transactions



E-Wallet/Mobile transactions



Credit & Debit card transactions



AEPS transactions

.

GLOBAL COMPARISON OF CASHLESS TRANSACTIONS

The cashless methods of transactions are more prominent in developed countries like Belgium, France, Canada, and the United Kingdome etc. There are also so many developing countries like Nigeria and Brazil where the cashless systems are deployed recently to promote cashless transactions and also to reinforce a cashless society in the country. Along with this deployment, the governments of these countries are also trying to eradicate the problems like terrorism and tax evasion. So far this policy has been proven to be very successful in Nigeria and Brazil.

Although technological advancement has enabled improvement and innovation in electronic payment system, from the basic ATM card transaction to online credit transfer, direct debit, card payments and, cheques is an indicator of the adoption of cashless payments in western countries like The United States of America and underdeveloped countries such as Bangladesh and India. In the modern world India is very famous for its development in the field of information technology and software development but it is very far behind in the usage of the cashless transactions if compared to other countries. So a special care has to be taken into consideration to bring India at the front line to make it at par with other countries in the adoption of these cashless transaction methods.

Table No: 2 Total cashless transactions in developed and developing countries

COUNTRIES	CASHLESS TRANSACTIONS
1-Singapore	61%
2-Netherlands	60%
3-France	59%
4-Sweden	59%
5-Canada	57%
6-Belgium	56%
7-United Kingdom	52%
8-USA	45%
9-Australia	35%

COUNTRIES	CASHLESS TRANSACTIONS
10-Germany	33%
11-South Korea	29%
12-Spain	16%
13-Brazil	15%
14-Japan	14%
15-China	10%

Source: Huge Thomas 2016, Measuring progress towards cashless society [4]

As shown in the above table no: 2, the massive adoption of digital technologies to generate process, share and transact information has triggered the entire world to adopt cashless transaction methods. India is a country where 98 per cent of total economic transactions by volume are done in cash. The behaviour of the Indian customers who think that cash is the best option and do not believe in credit or virtual payment methods might be responsible for this lack. However, this may no longer be the case in future as the government has already steered the country towards cashless society. Prime Minister's demonetisation move has also divided the top economists in and outside the country over its unquantifiable outcomes.

GROWTH OF CASHLESS TRANSACTIONS IN BRICS COUNTRIES

To add India in the table No: 2 is not suitable because all the countries in that table are unequal in term of area, GDP, type of economy and, population. Therefore the researcher assumes the growth of cashless transactions among BRICS countries that are similar in many ways. BRICS is a grouping acronym that refers to countries of Brazil, Russia, India, China and, South Africa that are all deemed to be at a similar stage of newly advanced economic development.

Table No: 3 Total cashless transactions in BRICS nation

S.NO	COUNTRY	CASHLESS TRANSACTIONS
1	Brazil	15%
2	Russia	4%
3	**India**	**2%**
4	China	10%
5	South Africa	6%

Source: Huge Thomas 2016, Measuring progress towards cashless society [5]

According to the above table No: 3, it may be inferred that India is a leap behind in cashless transactions if compared to other BRICS nations despite of being a global leader in information technology, emerging economy, and young population. The findings in this research would give a clear explanation of this backwardness in cashless transaction in India and find out the major challenges that are hindering the growth of cashless transactions.

REVIEW OF LITERATURE

National Reviews

- **KARAMJEET KAUR AND DR ASHUTOSH PATHAK** (2016) have explained in their research paper titled **"E-Payment System on E-Commerce in India"** the different types of cashless transactions methods including their functionality and processing. They have revealed that it is quite difficult, but not impossible, to suggest that which payment system is best. Some systems are quite similar, and differ only in some minor details. Thus there are number of factors that affect the usage of e-commerce payment systems.[6]

- **Dr. HITESH KAPOOR** (2016), in his research paper titled" **Consumer satisfaction and E-Banking"** has attempted to identify the factors that contribute to the consumer satisfaction with internet banking. Banking sector is one of the first sectors to make global presence. With the change in technologies adopted by banks, strategies used by the banks are also changing. Dimension of service quality like tangibility, reliability, responsiveness, assurance and empathy have shown more or less a great impact on customer satisfaction with internet banking services. [7]
- **SYED NITAS IFTEKHAR et al** (2015) in their research paper titled **"ICT Based Education for Literacy in India: Vision Beyond"** have explored that adaptation of skills and Information Communication Technologies (ICTs) with functional literacy skills as base for lifelong learning has to be a core element. In India there is need to expand formal and non-formal adult education with the concept of life-long learning using ICT. It is suggested in the paper, how India can develop a strong and effective ICT based education system to impart literacy. [8]
- **Dr. SUBRAMANIAN.S** (2014) has analyzed in his research paper titled "**paper-free payment systems in India-an analytical study"** that electronic payment systems have been proving to be effective in India during the period of study. Furthermore, this study also revealed that all electronic modes of payments have attained a vast growth compared to the physical paper- based payments like cheques or drafts etc. [9]
- **DR. VIPIN KUMAR & KADAMBINI KUMARI** (2014) in their research paper titled **"A shift Paradigm of Consumer towards online shopping"**, have identified Shopping and its paradigm shift due to the influence of technology with most people preferring online shopping to the traditional physical store shopping. This research aimed to understand the comparison between online shopping & physical shopping.

Refer to study the Shifting of consumer behaviour towards these modes of shopping compare towards other shopping mode like physical shopping mode which was trend in the past. [10]

- **CHANDRA GNANASAMBANDAM et al** (2012) in his technical report "**Online and upcoming: The Internet's impact on India"** which was published for the McKinsey and company, has explored and interpreted the role of internet in China, Brazil, Russia, and India facilitating the cashless transactions in last five years. The study assesses the impact of the Internet on various groups of users which has classified them into four broad types: individuals, entrepreneurs, enterprises, and the government. [11]
- **DR. GARIMA MALIK et al** (2013), in the paper entitled **"A exploratory Study on Adoption and Use of SMS/Mobile Banking in India with Special reference to Public Sector Banks"**, investigated the perceptions of banks and customers regarding the adoption of technology. The study concluded that "SMS/Mobile Banking services are gaining popularity among the users day by day but still banks have the potential of increasing its usage for customers. However, lack of Regulations for Electronic Banking in India remains a setback for mobile banking which needs to be addressed to ensure customer trust and to make it more effective in the times to come. [12]
- **VIJAY M. KUMBHAR** (2011), the research paper **"Determinants of customer satisfaction in ATM service setting: Empirical evidences from India"** strived to provide a preliminary investigation of factors affecting the customer satisfaction in ATM service. The study revealed that system availability, e-fulfilment, cost effectiveness, security and responsiveness, efficiency, easiness and convenience and contact were most important factors. This study is with reference to private and public sector banks. However, co-operative banks have not been considered. [13]

- **SACHIN KUMAR** (2011), In the article **"India riding the ATM wave"** presented the reader with rising number of ATMs in the country by nearly one third while cash withdrawn through ATM rose three times between Jan 2010 and Jan 2011. The author pointed out correctly to the fact that the important reason for the increasing popularity of ATMs in India is the bouquet of services they offer. Present day ATMs have turned into mini financial stores offering services like money transfer, mobile and electricity bill payment, income tax payment, cash deposit and even air ticket booking. [14]
- **RAJA, VELMURGAN AND SEETHARAMAN** (2008) have explained in their research paper titled **"E-payments: Problems and Prospects".** This paper discussed the evolution and the growth of electronic technologies, which can provide more advanced technical supports for electronic payment systems. The focus of this paper is to identify and explain the different methods of e-payment. The authors analysed the challenges of electronic payments from different perspective and provided preliminary security countermeasures for each of the issues. [15]

International Reviews

- **HOCK-HAN TEE & HWAY-BOON ONG** (2016) in their book named **"Cashless Payment and Economic Growth"** examined the effect of adopting cashless payment in five European Union (EU) countries, namely, Austria, Belgium, France, Germany, and Portugal, for the period of 2000-2012. The adoption of one type of cashless payment will affect another type of cashless payment in the short run. The impact of adopting cashless payment on economic growth can only be significantly observed in the long run. Hence, any policy that promotes cashless payment will not affect the economy immediately. [16]
- **SOLEIMANI ROOZBAHANI** (2015), in her research paper titled **"Customer Satisfaction Case Study: Pasargad Bank E-Payment Company"**, has researched

regarding goal and a correlation type descriptive-survey regarding methodology. The research indicated that there is a positive and significant relationship between e-payment tools and e-banking. Therefore, the results can help to identify effective factors of customer satisfaction and in turn providing competitive advantage for this and similar organizations. [17]

- **JASHIM KHAN, MARGARET CRAIG-LEES** (2014) in their research paper titled "**Cashless' transactions: their effect on purchase behaviour"** have revealed that that when a credit card based payment is used, the volume, value and type of products purchased increase. This is due to the credit element, or to the cashless element of the transaction. The notion that the tangibility of cash influences perceptions is not novel, but it is untested. The perception may well have a direct impact on purchase behaviour. [18]
- **ALAWIYE ADAMS ADEWALE** (2013) has explained in his paper titled **"The cashless payment system as a panacea to the national security challenges in Nigeria"** that the cashless payment systems have a great impact on the economy and the part of the population which is illiterate cannot access these methods. This illiterate part of the society plays an important role in the success of the cashless economy of a country. He has also explained that the cashless systems reduce the criminalities and terrorism because direct cash is not involved in such transactions. [19]
- **RAUL L. KATZ and PANTELIS KOUTROUMPIS** (2013), in their research paper titled **"Measuring socio-economic digitization: A paradigm shift"**, have defined paradigm shift as a social transformation triggered by the massive adoption of digital technologies to generate, process, share and transact information. Unlike other technological innovations, digitization builds on the evolution of network access technologies, semiconductor technologies, software engineering and the spill over

effects resulting from their use. The results provide strong support for the effect of digitization across all growth generating metrics. [20]

- **ABRAZHEVICH D et al** (2009) in their empirical study "**Electronic Payment Systems: a User-Centred Perspective and Interaction Design"** has succeeded in demonstrating the potential validity of certain design recommendations, acquiring new validated design knowledge, which was not available before the study. The design recommendations are a valuable output of the study, suggested a design approach to e-commerce EPSs unmatched by any previous work in this direction, as far as it was possible to establish. [21]
- **TIMOTHY E. PUTNAM** (2006), in his research paper titled **"Environmental Paradigm Shifts: Their Causes, Attributes, and Implications for Environmental Sustainability"**. The study explored EPS's in an undergraduate student population through a survey by determining endorsement of the New Ecological Paradigm and the Connectedness to Nature Scale, causes of EPS's, and the frequencies of performing pro-environmental behaviours. The relationship has implications for utilizing the institutions of society to induce EPS's within the general public, creating a more sustainability-minded society. [22]
- **WORTHINGTON** (1995) in his research paper titled **"The cashless society"** described the cashless society, where clumsy and expensive-to handle coins and notes are replaced by efficient electronic payments initiated by various types of plastic cards is a tantalizing prospect for the twenty-first century. Some of the interested parties stand to gain more than others if the cashless society becomes a reality. Paper outlines the rationale of those who are keen to promote the cashless society and the implications for marketers charged with winning consumer acceptance for payment by plastic card. [23]

- **THOMAS S. KUHN** (1962), in his book "**The Structure of Scientific Revolutions"**, has explained the theory of paradigm shift with reference to a science. He has established the relationship between the paradigm and organizational strategy needs to be made clear. Environmental forces and organizational capabilities do not in themselves create strategy; people create strategy. However, environmental forces and organizational capabilities while having this indirect influence on strategy formulation, nonetheless impact on organizational performances more directly. [24]

NEED OF THE STUDY

India has passed through various transformations in the recent years that are responsible for the industrialization, international trade, and economic growth. Despite the various growth indicators, the percentage of total cashless transactions in India is very less if compared within the group of BRICS nations like Brazil, Russia, India, China, and South Africa that have a similar economic growth rate. The total transactions carried out without physical currency in India is around 2% if compared in the group of BRICS nations. The research will study the paradigm shift along with this backwardness in cashless transactions in India.

The study can find out the major factors responsible for the cashless transactions, and their role play in the various portals and schemes that are recently started in India, for e.g:, Digital India, Atal Mission for Rejuvenation and Urban Transformation (AMRUT), Smart City Mission and, other schemes under NITI Ayog. These schemes are aimed towards the economic and national development where cashless transactions play an important and crucial role in the success of these schemes. The study will benefit in several sectors like income tax, and trade as their development will prove to be very beneficial in a country like India which is fiscally constrained.

The study will cover up major methods of cashless transactions that have never been studied together either in national or international researches. There are a very limited number of studies in conjunction with the basic mechanism of these methods and limitations of their components resulting in failure of the system.

OBJECTIVES OF THE STUDY

1. To identify the factors responsible for cashless transactions.
2. To analyze the effects of cashless transaction methods on consumers.
3. To examine the challenges in cashless transaction methods in India.
4. To evaluate the role of government in reinforcing cashless transaction system in India.

The researcher would like to test the validity of the following hypotheses with reference to the objectives.

HYPOTHESES

$H_{01.}$ There is no significant difference in the effect of the factors responsible for cashless transactions.

$H_{02.}$ The effectiveness of cashless methods and consumer satisfaction are independent to each other.

Table No: 4 Hypotheses with their corresponding Objectives and Test

HYPOTHEIS	OBJECTIVE	TEST
$H_{01.}$ There is no significant difference in the effect of the factors responsible for cashless transactions.	**1.** To identify the factors responsible for cashless transactions.	ANOVA
$H_{02.}$ The effectiveness of cashless methods and consumer satisfaction are independent to each other.	**2.** To analyze the effects of cashless transaction methods on consumers.	Chi Square

RESEARCH METHODOLOGY

NATURE OF THE STUDY

As the study requires in-depth knowledge and analysis of data, the research would be descriptive, analytical, as well as comparative in nature.

LOCALE OF STUDY

The study will be covering up five urban cities of Uttar Pradesh. The researcher has selected these five cities on the basis of highest Human development index (HDI) which is based on the census of 2011 by the government of India. The Human Development Index (HDI) of top five cities is calculated by taking the arithmetic mean of the three disaggregated dimension indices and therefore the inequality in the weight of each index for each city is already adjusted. The researcher has selected the top five cities; Gautam Buddha Nagar, Kanpur, Lucknow, Ghaziabad and, Jhansi for the study as shown in the table no: 5. The researcher has selected the top five cities on the basis of highest HDI score between 0.710 – 0.757.

Table No: 5 HDI of top ten cities of Uttar Pradesh

RANKING	CITY	HDI
1	Gautam Buddha Nagar	0.757
2	Kanpur	0.728
3	Lucknow	0.717
4	Ghaziabad	0.716
5	Jhansi	0.702
6	Meerut	0.681
7	Mathura	0.679
8	Baghpat	0.675

RANKING	CITY	HDI
9	Auraiya	0.669
10	Etawah	0.663

Source: Nagendra Kumar Maurya 2015, Human development in Uttar Pradesh [25]

SAMPLING TECHNIQUES

- Probability sampling (Simple Random Sampling) will be used for the following reasons:
  - The population is infinite.
  - The distribution of the sample in geographical location is not even.
  - The population is homogeneous in nature
- Non probability sampling (judgmental Sampling) may also be used.

SAMPLE SIZE

The following sample size formula for infinite population will be used to arrive at a representative number of respondents (Bill Godden, 2004).

$$SS = \frac{Z^2 \text{ x } (p) \text{ x } (1\text{-}p)}{M^2}$$

Where:

SS = Sample size for the infinite population (more than 50,000)

Z = The value of confidence level (e.g., 1.96 for 95% confidence level)

P = Population proportion (expressed as decimal) assumed to be 0.5 (50%) since this provides the maximum sample size.

M = Margin of error at 5% (0.05)

In this study a sample size of **384** is suggested by the above said formula for infinite population given by Bill Godden, which makes it true representative of the population. To

make the research less unbiased the sample size for each city has been rounded off and therefore the researcher has proposed a sample size of total **400** which is represented in the table no: 6.

DISTRIBUTION OF SAMPLE

Table No: 6 Distribution of sample

CITY	SAMPLE SIZE PER CITY (as per Godden's formula)	SAMPLE SIZE PER CITY (rounded off)
Gautam Buddha Nagar	76.8	80
Kanpur	76.8	80
Lucknow	76.8	80
Ghaziabad	76.8	80
Jhansi	76.8	80
TOTAL	384	**400**

Source: Proposed by the researcher

DATA COLLECTION

The data for the study will be collected through both primary and secondary sources.

Primary data

The primary data will be collected from the respondents through a self-structured questionnaire which will be executed to the respondents for the Pilot study. Any amendment which would be felt necessary will be made in the final questionnaire before administrating it to the full and final respondents.

Secondary data

The secondary data will be collected from various sources like websites, online and offline annual reports, magazines, journals, newspapers, and thesis.

STATISTICAL TOOLS

To make the study more scientific, the researcher will use the statistical tools like ANOVA, Chi-square tests as mentioned in the table no: 4 on page no 22.

RELIABLITY

The test of reliability used by researchers is Cronbach's coefficient alpha which will be used to test the consistency of respondent's answers to all the items in the measurement. Cronbach alpha for all the variables exceed 0.7 which makes it acceptable, in fact since they range from 0.7 to 0.9 are acceptable to excellent measures.

PROPOSED OUTLINE OF THE STUDY

CHAPTER-1	INTRODUCTION
CHAPTER-2	REVIEW OF LITERATURE
CHAPTER-3	RESEARCH METHODOLOGY
CHAPTER-4	ANALYSIS OF DATA
CHAPTER-5	RESULTS AND CONCLUSIONS
CHAPTER-6	SUGGESTIONS
ANNEXURES	I- BIBLIOGRAPHY
	II- QUESTIONNAIRE

REFERENCES

1. Abrazhevich, Dennis (THESIS 2004) "Electronic payment systems: a user-centred perspective and interaction design" ISBN 90-386-1948-0, J.F. Schouten School for User-System Interaction Research, The Netherlands, pp: 10-36.
2. FICCI-Technopak report (2016), India food service industry, and its growth, https://assets .kpmg. com/content/dam/kpmg/in/pdf/2016/11/Indias-food-service.pdf (date of access 06/12/2016).

3. Reserve bank of India, Annual reports, archives, 2011-2016.https://rbi.org.in/Scripts /AnnualReportMainDisplay.aspx. (Date of access 04/01/2017).
4. H. Thomas 2016, master card advisor's technical report towards cashless society, http: //www.mastercardadvisors.com/_assets/pdf/MasterCardAdvisors-cashlessSociety.pdf
5. H. Thomas 2016, master card advisor's technical report towards cashless society, http: //www.mastercardadvisors.com/_assets/pdf/MasterCardAdvisors-cashlessSociety.pdf (date of access 26/02/2017).
6. Karamjeet Kaur et al (2016) "E-Payment System on E-Commerce in India" Journal of Engineering Research and Applications, www.ijera.com ISSN: 2248-9622, Vol. 5, Issue 5, and (Part 6) May 2015, pp: 63-73.
7. Dr. Hitesh Kapoor (2016), Customer Satisfaction and E – Banking services: a Case Study of Tricity, International Journal of Innovative Research in Science, Engineering and Technology Vol. 4, Issue 10, October 2015, ISSN: 2319-8753.
8. Syed Nitas Iftekhar and Hyeon Jihye (2015), ICT Based Education for Literacy in India: Vision Beyond 2015, International Journal of Information and Education Technology, Vol. 6, No. 5, May 2016.
9. Dr. Subramanian. S (2014), Paper- free payment systems in India: an analytical study, International journal of management, ISSN 0976-6502, Volume 5, Issue 1, January (2014), pp. 80-87
10. Dr. Vipin Kumar & Kadambini Kumari (2014), a shift Paradigm of Consumer towards online shopping, IOSR Journal of Business and Management, e-ISSN: 2278-487X, p-ISSN: 2319-7668. Volume 16, Issue 3. Ver. III (Feb. 2014), pp 90-99.
11. Chandra Gnanasambandam et al (2012), technical report "Online and upcoming: The Internet's impact on India", McKinsey and company. http://www.mckinsey.

com/~/media /mckinsey% 20offices/ india/pdfs/ online_and_upcoming _the_ internets_impact _ on _ india.ashx (date of access 06/02/2017).

12. Dr. Garima Malik and Mr. Kapil Gulati (2013), An exploratory Study on Adoption and Use of SMS/Mobile Banking in India with Special reference to Public Sector Banks, Pacific Business Review International Volume 5 Issue 11 (May 2013)
13. Vijay M. Kumbhar (2011) "determinants of customer satisfaction in ATM service setting: empirical evidences from India", Management Research and Practice vol. 3 issue 2, pp: 24-35.
14. Sachin Kumar, Online articles, India riding the ATM wave, http: //www. hindustantimes. com /india /india -riding-the-atm- wave /story-O8SfQv GlKoD8d Ass0 B6GMI .html (date of access 25/02/2017).
15. J. Raja, M. Senthil Velmurgan, and A. Seetharaman (2008), E-payments: Problems and Prospects, Journal of Internet Banking and Commerce, April 2008, vol. 13, no.1
16. Hock HanTee and Hway Boon Ong (2016), Cashless payment and economic growth, financial innovation, Springer Open.https://jfinswufe. Springe ropen .com/articles/ 10 .1186/ s408540160023z5. (date of access 26/12/2016).
17. Soleimani Roozbahani (2015), Customer Satisfaction Case Study: Pasargad Bank E-Payment Company, Int. J. Advanced Networking and Applications Volume: 07 Issue: 02 pp: 2640-2649, ISSN: 0975-0290.
18. Jashim Khan and Margaret Craig-Lees (2014), "Cashless transactions: their effect on purchase behaviour", University of Auckland, International Business & Economics Review, vol.1, n.1 ISSN 1647-1989.
19. Alawiye Adams Adewale (2013), "The cashless payment system as a panacea to the national security challenges in Nigeria" SSRN journals, abstract: 2337239.

20. Raul L. Katz and Pantelis Koutroumpis (2013), measuring socio-economic digitization: a paradigm shift. http://www8.gsb. columbia.edu/rtfiles/ citi/Digitization%20paper, % 20 final.pdf (date of access 20/12/2016).
21. Abrazhevich, Dennis (THESIS 2004) "Electronic payment systems: a user-centred perspective and interaction design" ISBN 90-386-1948-0, J.F. Schouten School for User-System Interaction Research, The Netherlands, pp: 10-36.
22. Timothy E. Putnam (2006), Environmental Paradigm Shifts: Their Causes, Attributes, and Implications for Environmental Sustainability, Proceedings of the National Conference on Undergraduate Research (NCUR) 2006, The University of North Carolina, Asheville, North Carolina, April 6–8, 2006
23. Worthington (1995) "The cashless society", International Journal of Retail & Distribution Management, ISSN: 0959-0552, Vol. 23, pp: 31 – 40.
24. Thomas S. Kuhn (1962), The structure of scientific revolutions, International unified science, The University of Chicago, ISBN: 0-226-45803-2, pp: 25-38.
25. Nagendra Kumar Maurya, Sapana Singh and, Shagun Khare, Human Development in Uttar Pradesh: A District Level Analysis, Social Science Spectrum, ISSN 2454-2806, Vol. 1, No. 4, December 2015, pp. 262-278

BIBLIOGRAPHY

BOOKS

- Beitrage Zur Wirtschafts- Und Sozialgeschichte (2008) Cashless Payments and Transactions from the Antiquity to 1914, Franz Steiner Verlag Wiesbaden Gmbh publishers, ISBN-10: 3515092595
- Kothari C.R (2007) "Research Methodology-Methods and techniques" New Age International Pvt. Ltd. Publishers.
- Gupta S.P. (2002), "Statistical Methods" Sultan Chand and Sons

- Hawkins , Motherbaugh , & Mookerjee (2014) “Consumer Behavior: Building Marketing Strategy”, Mc Graw Hills Publication, ISBN: 9789351344791
- Suja R. Nair (2004) “Consumer Behaviour in Indian Perspective”, Himalya Publishing house, ISBN: 9788178661698

NEWSPAPERS, MAGAZINES, REPORTS AND THESIS

- The Hindustan Times
- The Hindu
- Times of India
- Annual reports of Reserve bank of India
- Mc Kinsey report 2015
- World Internet report 2016
- Indian government census report 2011
- Abrazhevich Dennis (Thesis 2004) on methods of transaction

Asim Husain	**Dr. Sanjeev Bhatnagar**	**Dr. Akshay Kumar Satsangi**
Researcher	Supervisor	Co-supervisor

Prof. Sanjeev Swami	**Prof. S.P Shrivastava**
Head of the department	Dean